



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,848	01/30/2004	Tsutomu Koga	1309.43463X00	4138
24956	7590	08/10/2005	EXAMINER	
MATTINGLY, STANGER, MALUR & BRUNDIDGE, P.C.			DINH, TUAN T	
1800 DIAGONAL ROAD			ART UNIT	
SUITE 370			PAPER NUMBER	
ALEXANDRIA, VA 22314			2841	

DATE MAILED: 08/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H.A

**Office Action Summary**

Application No.

10/766,848

Applicant(s)

KOGA ET AL

Examiner

Tuan T. Dinh

Art Unit

2841

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 January 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 7-10 is/are rejected.
- 7) ☒ Claim(s) 5-6 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 01/04, 04/05.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Drawings*

1. The drawings are objected to under 37 CFR 1.83(a) because they fail to show "at least one of said second signal connection rows is connected by said wiring pattern group by ones of said wiring layers using different ones of said wiring layers, claim 5, lines 7-8, and said N2 of said signal path groups of each of said signal processing substrates is connected by said wiring pattern group by using different ones said wiring layers, claim 6, lines 2-4" as described in the specification. Any structural detail that is essential for a proper understanding of the disclosed invention should be shown in the drawing. MPEP § 608.02(d). Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are

Art Unit: 2841

not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

2. Claims 3, 5, 7-10 are objected to because of the following informalities:

Claim 3, lines 2-3, "said first kind of signal processing substrates... said second kind of signal processing substrates" should be changed to - - said first kind of signal processing substrate... said first kind of signal processing substrate - - for proper antecedence basis.

Claim 3, lines 3-6, "said first signal connection point group... said second signal connection point group" should be changed to - - said first signal connection point groups... said first signal connection point groups - - for proper antecedence basis.

Claim 5, lines 2-4, "said first signal connection point group... said second signal connection point group" should be changed to - - said first signal connection point groups... said first signal connection point groups - - for proper antecedence basis.

Claim 5, lines 7-8, "said wiring pattern group" should be changed to - - said wiring pattern groups - - for proper antecedence basis.

Claim 7, line 2, "said wiring pattern group" should be changed to - - said wiring pattern groups - -.

Claim 8, line 2, "said wiring group" should be changed to - - said wiring pattern groups - -.

Claim 9, lines 13-14, "said bus switch signal connection point group and said adaptor signal connection point group" should be changed to - - said bus switch signal connection point groups and said adaptor signal connection point groups - -.

Claim 9, line 17, "said wiring pattern group" should be changed to - - said wiring pattern groups - -.

Claim 10, line 2, it is unclear. The phrase of " a fitting substrate for connection" is not understood. What does applicant mean of "for connection" and what "for connection" refers to?

Claim 10, line 3, "to one of the surfaces" should be changed to - -to one of surfaces - -.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1-4,7-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Prior Art (submitted by applicant, figures 10-12, hereafter APA).

As to claim 1, APA discloses a fitting substrate (500, see figure 10) for connection to which first and second kinds transmitting and receiving signals are fitted, comprising:

a substrate main body (the body of the backplane 500);

first signal connection point groups (512), see figure 12, formed on said substrate main body (500) and connected to said first kind of signal processing substrate (510);

second signal connection point groups (522) formed on said substrate main body (500) and connected to said second kind of signal processing substrate (520); and

wiring pattern groups (figure 12 shows wiring patterns on a top row connected between connectors 512 and 522) for electrically connecting mutually corresponding signal connection points of said first and second signal connection point groups (512, 522) to one another;

wherein said first and second signal connection point groups (512, 522) are respectively formed so that mutually corresponding signal connection points can be arranged substantially horizontally on the same plane (see figure 12), and said wiring pattern group is formed substantially linearly in match with the arrangement of each of said signal connection points.

As to claim 2, APA discloses the fitting substrate (500) as shown in figure 12 said first and second signal connection point groups (512, 522) are so formed on the same plane as to extend in a first direction (x-direction) and said wiring pattern group is so formed as to extend in a second direction (y-direction) intersecting orthogonally said first direction.

As to claim 3, APA discloses the fitting substrate (500) as shown in figures 10-12 N1 of said first kind of signal processing substrate (510) and N2 of said second kind of signal processing substrate (520) are fitted to said substrate main body (500), said first signal connection point groups (512) is constituted by said N2 of signal path groups adjacent to one another in said second direction and said second signal connection point groups (522) is constituted by said N1 of signal path groups adjacent to one another in said second direction.

As to claim 4, APA discloses said substrate main body (500) is formed into multiple layers (see page 3, line 21) and said wiring pattern group is constituted by a plurality of wiring layers that said substrate main body (500) has.

As to claim 7, APA discloses said wiring pattern groups as shown in figure 12 formed to a length of 100% to 120% with respect to a distance between said mutually corresponding signal connection points.

As to claim 8, APA discloses said wiring groups as shown in figure 12 formed linearly (in a second direction, y-direction) with the exception portions in the proximity said mutually corresponding connection points.

As to claim 9, APA discloses a fitting substrate (500) as shown in figures 10-12 comprising

- a substrate main body (the body of the backplane 500);

- bus switch signal connection point groups (512) formed on said substrate main body (500) and connected to bus switch substrates (510);

adaptor signal connection point groups (522) formed on said substrate main body (500) and connected to adaptor substrates (520); and

wiring pattern groups (figure 12 shows wiring patterns on a top row connected between connectors 512 and 522);

said bus switch and adaptor signal connection point groups being formed in such a fashion that said mutually corresponding signal connection points are arranged substantially horizontally on the same plane, see figure 12;

said wiring pattern groups being formed substantially linearly in match with the arrangement of each of said signal connection points (512, 522).

As to claim 10, APA discloses a disk array control apparatus as shown in figures 10-12 comprising:

a fitting substrate (500); memory and bus switch substrates (520) fitted to one of surfaces of said fitting substrate (500); and adaptor substrates (510) fitted to said one surface;

said fitting substrate (500) including:

bus switch signal connection point groups (522) connected to said bus switch substrates;

adaptor signal connection point groups (512) connected to said adaptor substrates; and

wiring pattern groups (the wiring on a backplane 500);



said bus switch and adaptor signal connection point groups (522, 512) being formed in such a fashion that said mutually corresponding signal connection points are arranged substantially horizontally on the same plane;

said wiring pattern groups being formed substantially linearly in match with the connection points arrangement of each of said signal connection points.

### ***Allowable Subject Matter***

5. Claims 5-6 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

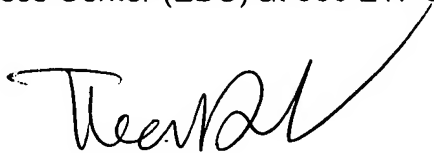
6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Stone et al., Balakrishnan, Poole, Bither et al., Pascale et al., and Giles disclose related art.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan T. Dinh whose telephone number is 571-272-1929. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kammie Cuneo can be reached on 571-272-1957. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2841

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Tuan Dinh', with a long, sweeping horizontal stroke extending to the right.

Tuan Dinh  
August 06, 2005.